



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,723	08/09/2001	Hironori Mizuguchi	Q65824	3958

7590 05/13/2004  
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037-3213

EXAMINER

AMINZAY, SHAIMA Q

ART UNIT PAPER NUMBER

2684

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/924,723

Applicant(s)

MIZUGUCHI, HIRONORI

Examiner

Shaima Q. Aminzay

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3,4,10/23/03</u> | 6) <input type="checkbox"/> Other: _____  |

## Detailed Action

1. First action, application filed on 08/09/2001, Foreign Priority: 8/9/2000.
2. Independent Claims 1, 6, 14, 22, 27, and dependent claims 2-5, 7-13, 15-21, 23-26 are pending in the case.
3. The present title of the application is "Transmission power control system and method capable of saving battery consumption of mobile station and preventing connection capacity from being reduced"

## NONE FINAL ACTION

### Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) Patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art (Admission), and in view of Beamish et al. U. S. Patent 6256476 B1.

4. Regarding claims 1, and 22, Admission teaches a base station of a mobile communication system with a transmission power control system (Figure 1, paragraph [0036], lines 1-12, including transmission power control (TPC) 14-1 to

14-N).

However, Admission does not teach a communication monitor circuit for detecting quality deterioration of radio communication with mobile stations, wherein: said communication monitor circuit comprising: a monitor unit for monitoring a communication state of said radio communication, a judging unit connected to said monitor unit for judging whether said communication state monitored by said monitor unit is worse than a predetermined state, and a notifying unit connected to said judging unit for notifying an external circuit of said quality deterioration when said judging unit judges that said communication state is worse than said predetermined state.

Beamish teaches a communication monitor circuit for detecting quality deterioration of radio communication with mobile stations (see for example, Figures 4A-B, column 6, lines 9-17, and column 7, lines 4-6) comprising a monitor unit for monitoring a communication state of said radio communication (see for example, Figure 4B, and column 7, lines 4-14; 405 monitors the communication state to determine the signal quality), and a judging unit connected to said monitor unit for judging whether said communication state monitored by said monitor unit is worse than a predetermined state (see for example, Figure 4B, Fast Power Control (450) connected to the 405 through switch 410, and column 7, lines 9-15; column 2, lines 28-33; judgment is being made if the communication state is worse based on comparison to predetermined threshold), and a notifying unit connected to said judging unit for

notifying an external circuit of said quality deterioration when said judging unit judges that said communication state is worse than said predetermined state (see for example, Figure 4B, Medium/High Power (460) and High Power (425) notifying units make separate connection to the judging unit (450) through switch (455) for notifying the external circuit of the signal quality deterioration by setting Fast Power Condition (FPC) bits, Figure 3, 332; column 4, lines 66-67, column 5, lines 5-10, 56-65).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Beamish's power transmission management of mobile station and base station (see for example, column 1, lines 8-12) with Admission's power transmission control system of mobile station and base station (paragraph [0036], lines 1-5) to provide a transmission power control system which increases the communication with the base station, and further increases the connection capacity of a mobile connection system (Admission, paragraph [0051], lines 1-6), and to provide a transmission power control system which is capable of conserving battery power by reducing the power consumed by the mobile unit (Beamish, column 1, lines 54-58) and to minimize the amount of time the mobile unit transmits at the highest power level (Beamish, column 1, lines 60-67).

5. Regarding claims 6, 8, 9, 14, 16, 17, and 27-34, Admission disclose a base station of a mobile communication system with a transmission power control

system to control transmission power of mobile stations by use of transmission power control bit signals (Figure 1, paragraph [0036], lines 1-12, including transmission power control bit (TPC) 14-1 to 14-N), and the base station including receivers for demodulating transmission signals transmitted from said mobile stations to produce demodulated signals (Figure 1, paragraph [0040], lines 1-4, receiver 11-n and mobile station 20-n), signal-to-noise ratio determining circuits connected to said receivers respectively for determining signal-to-noise ratios of said demodulated signals (Figure 1, signal-to-noise-ratio determining circuit (13-n) connected to the receiver (11-n); see for example, paragraph [0041], lines 1-3, and paragraph [0042], lines 1-4), and transmission power control bit generators connected to said signal-to-noise ratio determining circuits respectively for generating said transmission power control bit signals on the basis of said signal-to-noise ratios (Figure 1, transmission power control bit (TPC) generators (14-1 to 14-N) connected to the signal-to-noise-ratio determining circuit (13-n), see for example, paragraph [0042], lines 1-4).

However, Admission does not teach the base station comprising a communication state monitor circuit connected to the receivers for detecting quality deterioration of a communication state of radio communication between said base station and said mobile stations  
, and a transmission power bit adjusting circuit connected to said quality deterioration detector and said transmission power control bit generators for controlling said transmission power control bit signals so as to suppress increase

of transmission power of said mobile stations when said quality deterioration detector detects said quality deterioration.

Beamish teaches the base station communication state monitor connected to the receiver for detecting quality deterioration of a communication state of radio communication between the base station and the mobile station (see for example, Figure 1, column 3, lines 66 continued to column 4 lines 1-8; Figure 4B, and Figure 5 detect received signal quality deterioration, column 7, lines 56-63), and a transmission power bit adjusting circuit connected to said quality deterioration detector and the transmission power control bit generators for controlling transmission power control bit signals so as to suppress increase of transmission power of said mobile stations when said quality deterioration detector detects said quality deterioration (see for example, Figure 4B, and column 7, lines 4-37; 405 determines the communication state and transmission power bits (Figure 3, 332) connected to the quality deterioration detector (450) via 410 and connected to Medium/High (460) or High Power (425) via 455 to suppress increase of transmission power of the mobile stations when the quality deterioration detector detects said quality deterioration (for detailed adjustments of 332, see for example, Figure 3, column 4, lines 66-67 through column 5, lines 1-67, and column 6, lines 1-8, and a notifying unit connected to said judging unit for notifying an external circuit of said quality deterioration when said judging unit judges that said communication state is worse than said predetermined state (see for example, Figure 4B, Medium/High Power (460) and High Power (425)

notifying units make separate connection to the judging unit (450) through switch (455) for notifying the external circuit of the signal quality deterioration by setting Fast Power Condition (FPC) bits, Figure 3, 332; column 4, lines 66-67, column 5, lines 5-10, 56-65).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Beamish's power transmission management of mobile station and base station (see for example, column 1, lines 8-12) with Admission's power transmission control system of mobile station and base station (paragraph [0036], lines 1-5) to provide a transmission power control system which increases the communication with the base station, and further increases the connection capacity of a mobile connection system (Admission, paragraph [0051], lines 1-6), and to provide a transmission power control system which is capable of conserving battery power by reducing the power consumed by the mobile unit (Beamish, column 1, lines 54-58) and to minimize the amount of time the mobile unit transmits at the highest power level (Beamish, column 1, lines 60-67).

6. Regarding claims 2, 3, 4, 5, 10, 11, 12, 13, 18, 19, 20, 21, 23, and 24-26, Admission, and Beamish teach claims 1, 9, 14, 22, and further Beamish teaches when the interference electric power is equal to or larger than a predetermined threshold (see for example, Figure 5, column 8, lines 59-65, and Figure 6, column 10, lines 16-19).



Art Unit: 2684

7. Regarding claims 7, and 15, Admission, and Beamish teach claims 6, 14, and further Beamish teaches when the interference electric power is equal to or less than a predetermined threshold (see for example, Figure 5, column 8, lines 41-45, and lines 57-58).

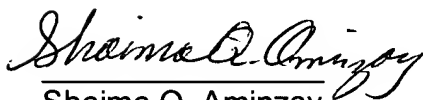
**Conclusion**

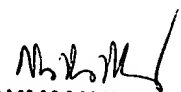
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Bender et al., Power Control in a Cellular System.
2. Gilhousen, Reverse Link, Closed Loop Power Control in a CDMA system.

**Inquiry**

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM.  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service telephone number is 703-305-3900.

  
Shaima Q. Aminzay  
(Examiner)

  
NAY MAUNG  
SUPERVISORY PATENT EXAMINER  
Nay Maung  
(SPE)  
Art Unit 2684

May 5, 2004